GSCI: GENERAL SCIENCE (UNDERGRADUATE)

GSCI 1000 Integrated Sciences (4 Credits)
This study seeks to introduce students to basic scientific principles and methods by integrating the following branches of science: physics, chemistry, astronomy, earth science and biology. These principles will be emphasized by applying them to real-world situations. Topics that will be introduced include: energy, laws of conservation of energy and matter, laws of thermodynamics, electricity, magnetism, atomic structure, wave properties, electromagnetic radiation, chemical bonding, materials in today's world, stars and the solar system, plate tectonics, earth cycles, classification of living organisms and the living cell. Student should select either this course or Physical Science as part of their degree program as there is substantial overlap in the course curriculums.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 1004 Introduction to Forensic Science (4 Credits)
This study introduces students to the field of forensic science. Students will learn about the processes of correctly identifying, collecting, handling, and managing potential forensic evidence. In addition, the scientific concepts, principles and equipment that are employed in a forensic laboratory to analyze collected evidence will be discussed. Topics that will be covered include: physical evidence, physical properties of glass, soil, hairs, fibers and paint, organic and inorganic analysis of matter, microscope types, arson forensic, computers forensic, DNA and fingerprints.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 1006 The Science of Cooking (4 Credits)
Cooking is a common, everyday activity and this course explores the fundamental concepts of biology, chemistry, and physics of food preparation. The chemistry and biology of basic food molecules and tastes and flavors are investigated and the impact of cooking on meats, vegetables, and baked goods is highlighted. The physics of heat transfer associated with different cooking methods is also explored. The course uses experimentation and observation to develop a broad understanding of an applied science. This course is designed for non-science majors.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 1020 Physical Science (4 Credits)
This course introduces the fundamental principles of physics and chemistry. Conceptual understanding of scientific principles and their practical applications will be discussed in the context of students' everyday experiences with the natural world. Topics in physics include measurement, force, motion, work, energy, temperature and heat, waves and wave effects, optics, electricity and magnetism, atomic structure, and nuclear physics. The chemistry portion will introduce chemical elements and the periodicity of their properties, chemical bonding, different types of chemical reactions, and major classes of organic compounds. Prior to taking this course, students must have the ability to manipulate simple algebraic expressions. Notes: Students should select either this course or Integrated Science. This course would be of interest to parents of young children and future elementary school teachers.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 1500 Science Colloquium (4 Credits)
This course aims to present an interdisciplinary seminar series that integrates science with current, popular, cultural, political, and environmental perspectives. Invited guest speakers across the natural and physical sciences present their research throughout the term. The research topics may include biology, chemistry, physics, ecology, environmental science, paleontology, geology, astronomy, psychology, and medicine. The goal of the course is to introduce students to an array of scientific disciplines through the application of the scientific method. As such, students will learn to use the scientific method to solve specific research questions and to consider how research may be important to everyday life. Students will have the opportunity to attend all seminars and interact directly with the guest scientists.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 1998 Individualized Studies in General Science (GSCI) (1-8 Credits)
Students have the opportunity to develop individualized studies with their mentor in General Science (GSCI). Registration for this class must be approved by the student's mentor.

GSCI 2200 GPS & The New Geography (4 Credits)
The environment is a major topic of public discussion and debate. Spatial information and geographic literacy is a basis for a growing number of disciplines since location affects our understanding of natural systems, from agriculture to climate change. In this activity-based course students will explore environmental science from a geographic perspective using global positioning systems and mass GIS to gather and analyze geographically referenced environmental data while learning about the broader applications of these tools to environmental science and other fields. At the same time, they will gain some hands-on experience in gathering geographic data and entering it into maps. This course was previously SMT-272774 GPS and the New Geography.
Attributes: Natural Science Gen Ed, *Natural Science Gen Ed, Liberal

GSCI 2998 Individualized Studies in General Science (GSCI) (1-8 Credits)
Students have the opportunity to develop individualized studies with their mentor in General Science (GSCI). Registration for this class must be approved by the student's mentor.

GSCI 3200 Geographic Information Systems (4 Credits)
Students will explore the application of spatial information to a range of problems in different organizational settings. Application areas might include: natural and social science, such as geography, geology, oceanography, archaeology and meteorology; government, such as city planning, law enforcement, military and social services; natural resource management, such as forestry and water resources management; and business, such as marketing. Topics will include data acquisition, accuracy, analysis and presentation and social and legal issues. This course was previously SMT-273764 Geographic Information Systems and the Use of Spatial Information. Prerequisites: Statistics (MATH 1065) or equivalent.

GSCI 3998 Individualized Studies in General Science (GSCI) (1-8 Credits)
Students have the opportunity to develop individualized studies with their mentor in General Science (GSCI). Registration for this class must be approved by the student's mentor.

GSCI 4200 Materials Science (4 Credits)
Materials Science will explore the different materials used in our world (metals, ceramics, polymers, composites and biomaterials), as well as their properties, history and applications. Topics that will be covered include: crystallographic structures identification and structures, metals, polymers, ceramics, carbon materials and composites, and measurement of mechanical properties. This course is designed for students majoring in the natural sciences and requires strong quantitative skills and mastery of topics typically covered in General Chemistry and Physics. Prerequisites: Organic Chemistry I, Algebra, and Physics I, or equivalent. This course is designed for students majoring in the natural sciences and requires strong quantitative skills and mastery of topics typically covered in introductory level courses in chemistry and physics as well as organic chemistry.
Attributes: Liberal

GSCI 4998 Individualized Studies in General Science (GSCI) (1-8 Credits)
Students have the opportunity to develop individualized studies with their mentor in General Science (GSCI). Registration for this class must be approved by the student's mentor.